

What is Claimed is:

1. A wavelength locker comprising:
 - a first photodetector which receives a first portion of a beam from a light source;
 - a second photodetector which receives a second portion of the beam;
 - a substrate including an etalon in a path upstream of the first photodetector, the substrate including another element which performs an optical function, the etalon having at least two sections presenting different free spectral ranges, said at least two sections being traversed by said first portion of the beam; and
 - a connector which supplies outputs of the first photodetector and the second photodetector to a wavelength controller of the light source.
2. The wavelength locker of claim 1, further comprising a divider which forms said first and second portions of the input beam.
3. The wavelength locker of claim 2, where said divider includes a diffractive grating which deflects a portion of the input beam into higher orders.
4. The wavelength locker of claim 3, wherein the diffractive grating is polarization insensitive.
5. The wavelength locker of claim 1, further comprising an optics block which directs the first and second beams to the first photodiode and the second photodiode, respectively.
6. The wavelength locker of claim 5, further comprising a divider which forms said first and second portions of the input beam, said divider being integrated on the optics block.
7. The wavelength locker of claim 5, wherein the optics block provides at least one of collimating and focusing to at least one of the input beam, the first beam and the second beam.

8. The wavelength locker of claim 6, wherein at least two of the etalon, the divider and the optics block are bonded together on a wafer level and diced to form that portion of the wavelength locker.

9. The wavelength locker of claim 1, further comprising a mount substrate on which the first photodetector and the second photodetector are mounted.

10. The wavelength locker of claim 9, wherein the mount substrate has a hole therein between the first photodetector and the second photodetector.

11. The wavelength locker of claim 9, wherein the mount substrate has a transparent region therein between the first photodetector and the second photodetector.

12. The wavelength locker of claim 9, further comprising a spacer between the mount substrate and the etalon.

13. The wavelength locker of claim 9, wherein the mount substrate has a recess therein in which the first photodetector and the second photodetector are mounted.

14. The wavelength locker of claim 1, wherein the another element which performs an optical function is at least one of a refractive element and a diffractive element.

15. The wavelength locker of claim 5, wherein the optics block reflects the first and second portions of the input beam to the first photodetector and the second photodetector, respectively.

16. The wavelength locker of claim 15, wherein the optics block provides multiple reflections to the first and second portions of the input beam to direct them to the first photodetector and the second photodetector, respectively.

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17. The wavelength locker of claim 1, wherein the etalon is solid.
18. The wavelength locker of claim 1, wherein the etalon has a gap between opposing reflective portions thereof.
19. The wavelength locker of claim 1, further comprising a third portion of the beam being output as an application beam to be directed to further applications.
20. The wavelength locker of claim 1, wherein the another element which performs an optical function is another etalon upstream of the second photodetector, the another etalon having a different path length than the etalon upstream of the first photodetector.
21. The wavelength locker of claim 1, wherein the another element which performs an optical function is a divider forming said first and second portions of the beam.
22. The wavelength locker of claim 19, wherein the another element which performs an optical function operates on the third portion of the beam.
23. The wavelength locker of claim 22, wherein the another element performs at least one of collimating and focusing of the third portion of the beam.
24. The wavelength locker of claim 1, wherein all optical elements for providing the first and second beams to the first and second photodetectors are on a single wafer or a wafer bonded thereto.
25. A wavelength monitor which monitors a wavelength of a beam, said wavelength monitor comprising:
 - a first detector receiving a first signal;
 - a second detector receiving a second signal;

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a third detector receiving a third signal, wherein the first, second, and third signals are each periodic with respect to wavelength and a set having a value for each of the first, second and third signals represents a unique wavelength within a continuous operational range;

an optical element which directs at least a portion of the beam onto each of said first, second, and third detectors; and

a processor receiving outputs from said first, second and third detectors, and determining the wavelength of the input beam.

26. The wavelength monitor of claim 25, wherein at least one of said first, second, and third signals is created using an etalon.

27. The wavelength monitor of claim 25, wherein each of said first, second, and third signals are created using an etalon.

28. The wavelength monitor of claim 25, wherein at least one of said first, second, and third signals approximate a sinusoid.

29. The wavelength monitor of claim 25, wherein, for each wavelength within the continuous operational range, at least one of the signals has a non-zero slope.